



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/074,345

02/12/2002

Halbert Tam

AMAT/6075/CMP/CMP/RKK

5690

32588 7590 01/30/2008
APPLIED MATERIALS, INC.
P. O. BOX 450A
SANTA CLARA, CA 95052

EXAMINER

MCDONALD, SHANTESE L

ART UNIT

PAPER NUMBER

3723

MAIL DATE

DELIVERY MODE

01/30/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte HALBERT TAM and GREGORY E. MENK

Appeal 2007-2310
Application 10/074,345
Technology Center 3700

Decided: January 30, 2008

Before MURRIEL E. CRAWFORD, JENNIFER D. BAHR, and
DAVID B. WALKER, *Administrative Patent Judges*.

WALKER, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Appellants seek our review under 35 U.S.C. § 134 of the Examiner's final rejection of claims 1-25 and 30-38. We have jurisdiction under 35 U.S.C. § 6(b) (2002). We affirm.

Appellants claim methods and compositions for planarizing a substrate surface with selective removal rates and low dishing (Specification 8:[0019]). Claim 1, reproduced below, is representative of the subject matter on appeal.

1. A method of selectively removing a dielectric disposed on a substrate having a first dielectric material and a second dielectric material disposed thereon, comprising:

pre-polishing the substrate to planarize the substrate by removing a bulk overfill of the first dielectric material;

positioning the substrate in proximity with a fixed abrasive chemical mechanical polishing pad;

dispensing a polishing composition having at least one organic compound therein between the substrate and the polishing pad; and

chemical mechanical polishing the substrate, wherein the at least one organic compound enhances the removal rate of the first dielectric material using the fixed abrasive chemical mechanical polishing pad without affecting the removal rate of the second dielectric material.

THE REJECTIONS

The Examiner relies upon the following as evidence in support of the rejections:

Srinivasan
Spikes

US 6,544,892 B1
US 6,599,174 B1

Apr. 8, 2003
Jul. 29, 2003

Claims 1-25 and 30-38 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Srinivasan in view of Spikes.

ISSUE

The issue before us is whether Appellants have shown that the Examiner erred in rejecting claims 1-25 and 30-38 as unpatentable over Srinivasan in view of Spikes. The dispositive issue is whether it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the polishing method of Srinivasan with a pre-polishing step as disclosed in Spikes.

Rather than repeat the arguments of Appellants and the Examiner, we make reference to the Briefs and the Answer for their respective details. Only those arguments actually made by Appellants have been considered in this decision. Arguments which Appellants could have made but chose not to make in the Briefs have not been considered and are deemed to be waived. *See* 37 C.F.R. § 41.37(c)(1)(vii) (2004).

FINDINGS OF FACT

We find the following enumerated findings to be supported by at least a preponderance of the evidence. *Ethicon, Inc. v. Quigg*, 849 F.2d 1422

(Fed. Cir. 1988) (explaining the general evidentiary standard for proceedings before the Office).

1. There is no dispute that Srinivasan discloses all of the limitations of claim 1 except for pre-polishing the substrate to planarize the substrate by removing a bulk overfill of the first dielectric material.
2. Spikes teaches a first polishing process, during which random surface variations may be removed from the pre-polish surface 122 of the first process layer (Spikes, col. 8, ll. 36-38). In one embodiment, approximately ninety percent of the material to be removed from the first process layer is abraded during the first polishing process (Spikes, col. 8, ll. 22-27). Spikes thus discloses the limitation of claim 1 that requires pre-polishing the substrate to planarize the substrate by removing a bulk overfill of the first dielectric material.

PRINCIPLES OF LAW

“Section 103 forbids issuance of a patent when ‘the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.’” *KSR Int’l Co. v. Teleflex Inc.*, 127 S.Ct. 1727, 1734 (2007). The question of obviousness is resolved on the basis of

underlying factual determinations including (1) the scope and content of the prior art, (2) any differences between the claimed subject matter and the prior art, (3) the level of ordinary skill in the art, and (4) where in evidence, so-called secondary considerations. *Graham v. John Deere Co.*, 383 U.S. 1, 17-18 (1966). *See also KSR*, 127 S.Ct. at 1734 (“While the sequence of these questions might be reordered in any particular case, the [*Graham*] factors continue to define the inquiry that controls.”)

In rejecting claims under 35 U.S.C. § 103(a), the examiner bears the initial burden of establishing a prima facie case of obviousness. *In re Oetiker*, 977 F.2d 1443, 1445 (Fed. Cir. 1992). *See also In re Piasecki*, 745 F.2d 1468, 1472 (Fed. Cir. 1984). Only if this initial burden is met does the burden of coming forward with evidence or argument shift to the appellant. *Id.* at 1445. *See also Piasecki*, 745 F.2d at 1472. Obviousness is then determined on the basis of the evidence as a whole and the relative persuasiveness of the arguments. *See Oetiker*, 977 F.2d at 1445; *Piasecki*, 745 F.2d at 1472.

ANALYSIS

The Examiner found that Srinivasan teaches all the limitations of claim 1 except for pre-polishing the substrate to planarize the substrate by removing a bulk overfill of the first dielectric material, and Spike teaches pre-polishing the substrate (Answer 4). The Examiner further found that it

would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the polishing method of Srinivasan with a pre-polishing step in order to remove the bulk overfill of dielectric material and more efficiently polish the substrates (*Id.*). For the reasons that follow, we agree.

The Appellants argue that Srinivasan discloses a one step polishing method without a pre-polishing step, while Spikes discloses a two step polishing process (Br. 11). The Appellants further argue that the combination of Srinivasan and Spikes would not meet all of the claim limitations because the second polishing step of Spikes is substantially slurryless, which would not meet the requirement for a polishing composition having at least one organic compound (Br. 12). This argument is not persuasive because the Examiner relies on Spikes only for the teaching of a pre-polishing step (Answer 6). Further, Appellants' argument appears to attack Spikes individually, rather than the combination of Srinivasan and Spikes proposed by the Examiner. Nonobviousness cannot be established by attacking the references individually when the rejection is predicated upon a combination of prior art disclosures. *See In re Merck & Co. Inc.*, 800 F.2d 1091, 1097 (Fed. Cir. 1986).

The Appellants have failed to show error in the Examiner's rejection of claim 1. Claims 2-25 and 30-38 were not argued separately, and fall with

Appeal 2007-2310
Application 10/074,345

claim 1. See 37 C.F.R. § 41.37(c)(1)(vii). See also *In re Young*, 927 F.2d 588, 590 (Fed. Cir. 1991).

CONCLUSION

We conclude that Appellants have not shown that the Examiner erred in rejecting claims 1-25 and 35-38 under 35 U.S.C. § 103(a).

DECISION

The decision of the Examiner to reject claims 1-25 and 35-38 under 35 U.S.C. § 103(a) is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a). See 37 C.F.R. § 1.136(a)(1)(iv) (2006).

AFFIRMED

vsh

APPLIED MATERIALS, INC.
P. O. BOX 450A
SANTA CLARA CA 95052